AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph [0028] with the following amended paragraph.

One surface of the mesa 12 has a piezoelectric material element 22 bonded to it using an adhesive 14. Alternatively, the piezoelectric material element 22 may be attached with using solder, thin film epoxies or the like. The piezoelectric material element 22 has a piezoelectric material width Wa. The piezoelectric material width Wa is shown as being larger than both the mesa width Wm and the chamber diaphragm width Wc, however the piezoelectric material width Wa can be a variety of sizes and will be optimized for the process parameters and the ultimate function. For instance, it may be desired when building sensors that the piezoelectric material width Wa be small relative to the chamber diaphragm width Wc. It is also possible in some cases for the piezoelectric material width Wa to be smaller ~~that~~ than mesa width Wm.

Please replace paragraph [0046] with the following amended paragraph.

The chamber diaphragm 10 and chamber diaphragm support structure 34 may be made out of any material with adequate stiffness and strength and manufacturability. The material stiffness, as measured by well-known parameters such as mechanical elastic modulus and poisson ratio, would be chosen for a given application to best achieve design goals such as stiffness of the chamber 16, which is measured by pressure change per volume change of the chamber. For instance, silicon, polysilicon, silicon nitride, stainless steel or silicon dioxide are commonly used as diaphragms although other materials such as plastics, metals such as aluminum and nickel or others, glass, or epoxy resins may also be used. The chamber

diaphragm 10 has two surfaces, a chamber diaphragm lower surface 36 which faces the chamber 16 and a chamber diaphragm upper surface 38 which is opposed to the chamber diaphragm lower surface 36 and faces the mesa 12.

Please replace paragraph [0028] with the following amended paragraph.

Figure 9 shows a cross-sectional view of a substrate 50 with substrate apertures 52. It should be noted that substrate 50 may be an intermediate substrate used for bonding purposes to achieve a good bond between the porous material and yet another substrate. For instance, the substrate 50 may be a thin film layer or other intermediate layer. The substrate 50 can comprise a variety of materials having characteristics similar to those used for diaphragms above such as oxides, nitrides, polyimides, metals and ceramics, or any rigid material. Adhesive 54 has been dispensed in any conventional manner to the substrate top surface 56 and may at least partially fill the substrate apertures 52. If the substrate apertures 52 are not filled in this step then they should fill in the subsequent step. The volume of adhesive material located in the apertures should be at least as much as required to counteract the absorption of adhesive into the porous material 58 to be attached The adhesive 54 should be chosen to be viscous enough when dispensed ~~to~~ for sufficient amounts to remain on the substrate top surface 56 while allowing some adhesive 54 to flow at least partially into the substrate apertures 52. The substrate apertures 52 are shown extending through the substrate 50 however the substrate apertures 52 need extend only partially into the substrate 50 to a depth to provide a sufficient reservoir of adhesive during the curing process. A depth of at least approximately 0.5 microns is believed to be sufficient for some adhesives. The substrate apertures should

be at least approximately 0.5 microns wide, evenly distributed and occupy no more than approximately 50% of the substrate top surface 56.